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REMARKS

Claims 1-28 are currently pending in the subject application and are presently under consideration. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments herein.

I. Rejection of Claims 1-6 Under 35 U.S.C. §112, First Paragraph

Claims 1-6 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection should be withdrawn for at least the following reasons. The specification of the subject application provides sufficient detail for one of ordinary skill in the art to perform the invention without undue experimentation.

The standard for determining whether the specification meets the *enablement requirement* was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) which postured the question: is the *experimentation* needed to practice the invention *undue or unreasonable*? *That standard is still the one to be applied. In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). *See also United States v. Teletronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988) ("The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation."). MPEP §2164.01

The Examiner contends that the argument set forth in response to the Office Action dated November 8, 2002 "is not accompanied by an affidavit or declaration or other presentation of evidence necessary to support such a statement and appropriately respond to the issue raised by the Examiner." However, the MPEP clearly states that the applicants' burden is to present *persuasive arguments* and that an applicant "*may*" (permissive language, not "shall" or "must") submit factual affidavits under 37 CFR 1.132 or cite references to show what one skilled in the art knew at the time of filing the application. (See MPEP §2164.05). Therefore, a responsive reply to the subject rejection does not necessitate accompaniment of an affidavit or declaration to support the claimed limitations. In addition, the MPEP states that the evidence provided by

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applicant need *not* be conclusive but *merely convincing* to one skilled in the art. (See MPEP §2164.05).

Thus, it is respectfully submitted that the specification satisfies the enablement requirement, pursuant 35 U.S.C. §112, first paragraph, for at least the reasons set forth in the response to the Office Action dated November 8, 2002, which includes the following: the specification discloses exemplary *parameters to guide* one of ordinary skill in the art *through the claimed methodology* recited in claims 1-6; and it is well known in the art that PI calculus can be utilized to model processes and that conventional PI calculus utilizes a verb to model such processes. As such, PI calculus and derivations thereof need not be provided in detail in the specification since "a patent *need not teach*, and *preferably omits*, what is well known in the art." (See *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991)).

In addition, and contrary to the Examiner's contentions, the specification discloses the role of the two verbs. In particular, it is disclosed that the *role* of the verbs is to explicitly *represent parallelism* and that this is achieved by utilizing the verbs to *separate* communicating and independent transactions. (See p.3, ¶2 and p.14, ¶3). Separating communicating and independent transactions can facilitate mitigation of deadlocks associated with conventional systems that do *not* consider independent transactions (e.g., that assume transactions are related). (See p.3, ¶2). For example, in conventional systems that do *not* consider independent transactions, deadlocks can occur where application specific programs cannot be invoked and transaction monitoring cannot be performed, based on any actions occurring within a transaction, until the transaction fails or commits. (See p.2, ¶¶2-3).

In view of the foregoing, it is respectfully submitted that this rejection is improper, and that the subject specification provides sufficient detail and would have been enabling to one skilled in the art at the time of the invention to make and use the invention without undue experimentation. Accordingly, this rejection should be withdrawn.

II. Rejection of Claims 1-6 and 23 Under 35 U.S.C. §101

Claims 1-6 and 23 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. It is respectfully submitted that this rejection is improper for at least the following reasons. The subject claims are directed to statutory subject matter.

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Because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result ... on its face the claimed process comfortably falls within the scope of §101. *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358. (Fed.Cir. 1999); *See State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601 (Fed.Cir.1998) (finding a system implementing a financial management structure satisfied §101 because it constituted a practical application of a mathematical algorithm by producing a useful, concrete and tangible result).

In particular, the Examiner asserts that claims 1-6 and 23 are directed toward the manipulation of abstract data; and therefore, are not concrete or tangible. The Examiner cites *In re Warmerdam*, 33 F.3d 1354, 31 U.S.P.Q.2D (BNA) 1754 (Fed. Cir. 1994) and *In re Schrader*, 22 F.3d 290, 30 U.S.P.Q.2D (BNA) 1455 (Fed. Cir. 1994) to support the foregoing assertion. However, merely determining whether an abstract idea is claimed is **not** enough to deem the claimed invention not concrete or intangible; the inquiry requires an examination to see if the claimed invention, *as a whole*, is applied in a practical application to produce a useful, concrete and tangible result. (*AT&T Corp., v. Excel Communications, Inc.*, 172 F.3d 1352; 1357, 1999 U.S. App. LEXIS 7221, 15-16; 50 U.S.P.Q.2D (BNA) 1447 citing *In re Alappat*, 33 F.3d 1526, 31 U.S.P.Q.2D (BNA) 1545 (Fed. Cir. 1994)). Furthermore, the court in *AT&T* found that the *Schrader* court ended its inquiry *prior* to determining whether a useful, concrete and tangible result ensued and concluded that the holding is **not helpful** in ascertaining whether an abstract idea is applied in a practical manner to produce a useful, concrete and tangible result. (*AT&T Corp.* at 1360; LEXIS 7221 at 24-5). In addition, the court in *AT&T* found that the *Warmerdam* holding did **not** contradict *Schrader*. (*Id.* at 1360, LEXIS 7221 at 25).

Contrary to the Examiner's contentions, the subject claims are directed towards applications that produce a useful, concrete and tangible result. For example, the subject claims recite utilization of process algebra (*e.g.*, the two-verbs PI calculus derivation) to facilitate modeling business processes. As known, any business process can be interpreted as a sequence of basic transactions, or workflows. (*See* p2, ¶1). In addition, transaction processing has introduced data for reliability, availability and performance, and fault tolerant storage and processes, in addition to contributing to a client-server model and remote procedure call for distributed computation, (*See* p.1, ¶2). Further, workflow applications can be of particular utility

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in processing business transactions between different companies, and automation of such processes can result in significant improvements in efficiency, not otherwise possible. (See p.1, ¶2). Benefits and improvements provided by the present invention are found in the Summary section of the present application. In another example, the process algebra, as claimed, can generate application programming language code (e.g., SLANG, See FIGs. 6-25), which can be represented as a GUI or a schedule that facilitates modeling business workflow processes. (See p.3, ¶1 and p.11, ¶1).

In view of the above, it is readily apparent that the claimed invention reduces to a practical application to produce a useful, concrete and tangible result when employed to model business workflow processes; and therefore, under AT&T, the subject claims are statutory subject matter. Accordingly, withdrawal of the rejection of claims 1-6 and 23 is respectfully requested.

III. Rejection of Claims 7-14, 22-25, and 28 Under 35 U.S.C. §102(b)

Claims 7-14, 22-25, and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by Release 8.0 of the publicly available Workflow Template software product as evidenced by "Using the WFT Development Environment" (hereinafter, "Template"). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Template does not teach or suggest each and every element, either expressly or inherently, as set forth in the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently describes each and every limitation set forth in the patent claim. *Trintec Industries, Inc., v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 U.S.P.Q.2D 1597 (Fed. Cir. 2002). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In particular, and as discussed in detail below, Template does not teach or suggest employing a component to *distinguish* between *autonomous and interdependent* transactions, a

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component to *define transaction boundaries*, a component to *define synchronizing constraints*, and utilizing *process algebra* to facilitate modeling business processes, as recited in the subject claims.

First, Template does not describe *autonomous and interdependent* transactions, as recited in the subject claims. In general, Template teaches a design editor that can be employed to generate a graphical representation (workflow design) of a workflow system, wherein a user can create, edit and remove work items, tasks, flows, junctions and labels from the representation. (See p.3-2). Work items (information) are created, processed and destroyed at tasks, and are routed between tasks *via* flows, or paths. More specifically, an individual work item can be routed to a task (*via* a plain flow path) or the individual work item can be *replicated* wherein multiple *copies* are created and routed to respective tasks (*via* copy flow paths). (See p.3-3). Template *explicitly states* that, "an *exact copy* of the work item ... is sent to each destination task." (See p.3-20). Since *exact copies* are created, Template cannot teach splitting a work item into two different items, for example an autonomous transaction and an interdependent transaction. In contrast, the specification of the present invention discloses that a transaction can divide into an autonomous and an interdependent transaction; and as provided in the specification, autonomous and interdependent transactions can be different. (See p.11, ¶12). Thus, Template does not teach or suggest *autonomous and interdependent* transactions, as recited in the claimed invention, but merely teaches employing multiple *exact copies* of the work item.

Next, Template does not teach or suggest a *distinguishing component* to distinguish between autonomous and interdependent transactions, as recited in the claimed invention. As described above, Template teaches *exact copies* of the work item that are generated and routed from one task to two or more tasks *via* a copy flow. When a copy flow is utilized, a junction box is displayed in the graphical representation at a point wherein respective *exact copies* of a work item are routed to respective tasks. (See p.3-20). The Examiner contends that the junction box is a distinguishing component that distinguishes between autonomous and interdependent transactions. However, a junction box is utilized where multiple *exact copies* of a work item are routed, and since respective work items are *exact copies*, it is inherent that work item copies are *indistinguishable*; and therefore, a junction box is *not* employed to distinguish work items, but rather utilized to facilitate work item *replication and routing*. In contrast, the subject claims

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recites employment of a *distinguishing component* to distinguish between the between the autonomous and interdependent transactions.

In addition, Template is silent regarding a component that *defines transaction boundaries*, as recited in the claimed invention. As disclosed in the subject application, a boundary establishing component can be employed to define transaction boundaries for parent interdependent transactions. (See p.5, ¶2 and p.12, ¶3). Likewise, Template is silent regarding a component that *defines synchronizing constraints*, as recited in the claimed invention. In contrast, the subject application discloses a component for defining concurrent synchronizing constraints, wherein synchronized constraints of transactions are expressed with respect to completion of autonomous operations. (See p.4, ¶2, p.5, ¶ and p.12, ¶3).

Moreover, Template does not even mention *process algebra*, let alone employing process algebra or derivations thereof, as recited in the subject claims.

In view of the foregoing, it is apparent that Template does not teach or suggest employing a component to *distinguish* between *autonomous and interdependent* transactions, a component to *define transaction boundaries*, a component to *define synchronizing constraints*, and/or utilizing *process algebra*, as recited in the subject claims. Therefore, it is respectfully submitted that the rejection of independent claims 7, 12, 22-24 and 28, and dependent claims 8-11, 13-14 and 25 (which depend therefrom) should be withdrawn.

IV. Rejection of Claims 15-20 Under 35 U.S.C. §103(a)

Claims 15-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Template. It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Template does not teach or suggest all the claim limitations of the subject claims.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim

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limitations. See MPEP §706.02(j). [T]he mere fact that the reference can be modified does not render the modification obvious unless the cited art also suggests the desirability of the modification. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

For at least the reasons noted *supra* regarding independent claim 12 (from which dependent claims 15-20 depend), Template does not teach or suggest the claimed invention. In addition, and contrary to the Examiner's contentions, it would not have been obvious to one of ordinary skill at the time of the invention to utilize process algebra, as recited in the subject claims. As previously described, Template teaches generating *exact copies* of a work item and not *autonomous and interdependent* transactions; and therefore, no motivation exists to employ a two-verb derivation of PI calculus (e.g., combinators) to *separate* autonomous and interdependent transactions. Accordingly, the rejection of claims 15-20 should be withdrawn.

V. Rejection of Claim 21 Under 35 U.S.C. §103(a)

Claim 21 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Template as applied to claim 13. Official Notice is taken by the Examiner that it is well-known and commonly practiced in the computer arts at the time the subject invention was made to incorporate a computer readable medium into a computer system in order to allow data transfer between the medium and the system, such as, for example, for the execution of a program embodied in a CD-ROM medium on such a computer system. It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Claim 21 depends from independent claim 12, and the Official Notice does not make up for the aforementioned deficiencies of Template with respect to claim 12. Accordingly, withdrawal of this rejection is respectfully requested.

VI Rejection of Claims 15-20 Under 35 U.S.C. §103(a)

Claims 15-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Template as applied to claim 12, and further in view of Chen, *et al.* (US 5,940,839). This rejection should be withdrawn for at least the following reasons. Template does not teach or suggest the claimed limitations of independent claim 12 as noted *supra*, and Chen, *et al.* fails to

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make up for the aforementioned deficiencies of Template. Accordingly, this rejection should be withdrawn.

VII. Rejection of Claims 26 and 27 Under 35 U.S.C. §103(a)

Claims 26 and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Template as applied to claim 24, and further in view of Ambler, *et al.* (US 6,393,456). Withdrawal of this rejection is respectfully requested for at least the following reasons. Claims 26 and 27 depend from independent claim 24, and Ambler, *et al.* does not make up for the aforementioned deficiencies of Template regarding the limitations recited in claim 24. Therefore, this rejection should be withdrawn.

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CONCLUSION

The present application is believed to be in condition for allowance, in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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